C. BRUSTMAN.
Straw-Cutter.

No. 206,224. Patented July 23, 1878.

Fig. 1

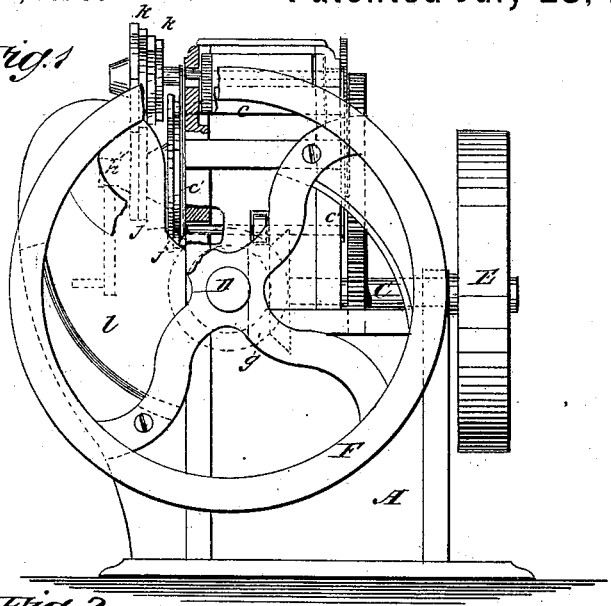


Fig. 2.

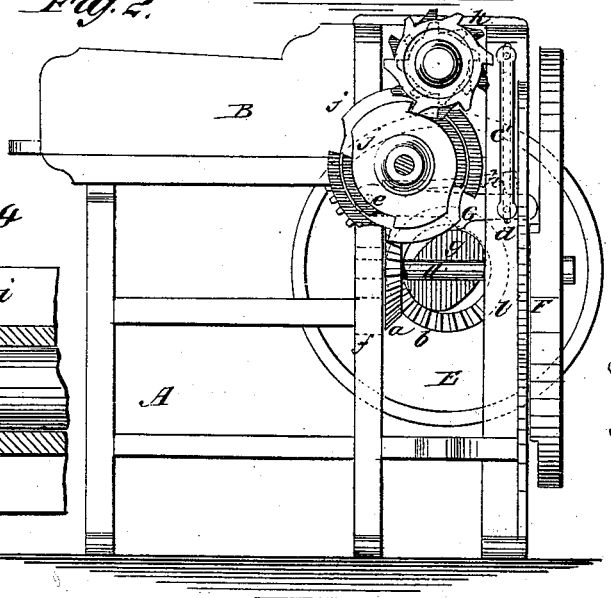


Fig. 4

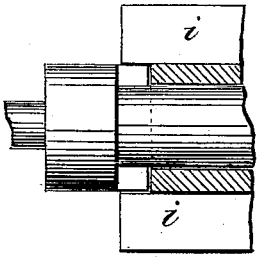


Fig. 5

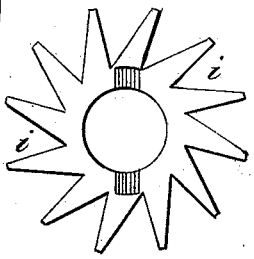
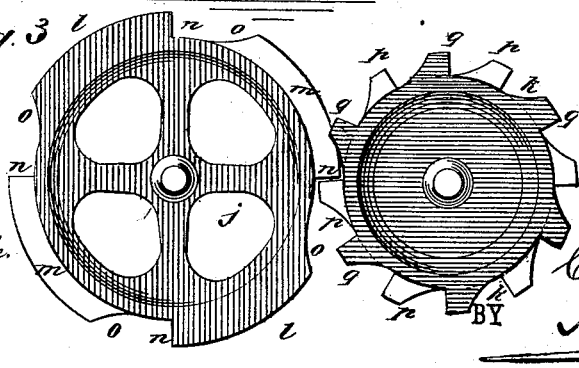


Fig. 3



WITNESSES:
F. McArdle.
C. Sedgwick

INVENTOR:
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ATTORNEYS.

UNITED STATES PATENT OFFICE.

CHARLES BRUSTMAN, OF FREMONT, NEW YORK.

IMPROVEMENT IN STRAW-CUTTERS.

Specification forming part of Letters Patent No. **206,224**, dated July 23, 1878; application filed May 16, 1878.

To all whom it may concern:

Be it known that I, CHARLES BRUSTMAN, of Fremont, in the county of Sullivan and State of New York, have invented a new and Improved Straw-Cutter, of which the following is a specification:

Figure 1 is a front elevation, partly in section. Fig. 2 is a side elevation. Fig. 3 is a detail view of the feed-gear. Fig. 4 is a detail sectional view of the end of one of the feed-rollers. Fig. 5 is an end elevation of the feed-rollers.

Similar letters of reference indicate corresponding parts.

My invention relates to machines for cutting hay or straw for feed.

The invention will first be described in connection with the drawing, and then pointed out in the claim.

In the drawing, A is the frame of the machine, which supports the straw-box B, and all of the working parts of the machine. In this frame, under the straw-box, there are two shafts, C D, which are placed at right angles to each other, and geared together by miter-wheels *a b*. The shaft C has upon its overhanging end a fly-wheel, E, and upon the shaft D is mounted a fly-wheel, F, which revolves in front of the throat of the straw-box, and carries two knives, whose edges are formed on a spiral line, and are arranged to make a drawing cut across the throat of the straw-box. The upper part, *c*, of the throat-plate of the straw-box is movable in guides formed in the end posts of the machine, and is connected by bars *c'* with a cross-bar, *d*, that is connected with a lever, G, which is fulcrumed on a rod, *e*, that extends through the two uprights *f*. The lever G is forced by a spring, *h*, into contact with a suitable cam, *g*, which is secured to the face of the miter-wheel *b*.

The position of the double cam on the wheel *b* is such that the lever G is raised when the straw is moved forward in the feed-box, thus raising the upper part of the throat-plate, making the throat larger, so that the straw may be readily moved forward by the feed-work, and the lever is permitted to move downward just before the knife reaches the projecting ends of the straw, so that the straw is compressed and held firmly during the operation of cutting.

There are two feed-rollers journaled in the box. The shafts of both revolve in fixed boxes, and are provided with spur-wheels, by which they are made to rotate together. The upper roll, *i*, is grooved or corrugated, and is loose on its shaft, so that it may rise and fall to accommodate itself to the amount of straw passing through the machine. It is made to rotate by lugs projecting from opposite sides of the shaft, which are received in corresponding recesses formed in the roll. The roll is pressed downward by two curved springs that bear upon it at its ends.

The driving-crank is attached to the lower roller-shaft, on which there are two similar wheels, *j*, which engage toothed wheels *k* on the shaft of the upper feed-roll, and impart to it an intermittent rotary motion. The wheels *j* are provided with four teeth, *l l* and *m m*. These teeth each extend over nearly a quarter of the circumference of the wheel, and each has a straight driving-face, *n*, and a curved face, *o*. The teeth *l l* are arranged diametrically opposite each other, and the teeth *m m* are arranged in the intervening spaces; but the teeth *l l* lie in one plane, and the teeth *m m* lie in another plane, both planes being parallel and at right angles with the shaft. The wheel *k*, that is driven by the wheel *j*, is provided with two series of teeth, *p q*, which also lie in different but parallel planes. These teeth are provided with a straight side, which is engaged by the straight side of the teeth *l m*. They also have a curved side. They are narrow, and are arranged so that when one of them moves as far as it can be carried by one of the teeth of the wheel *j*, it escapes the said wheel, and the tooth that escapes and the next one in advance of it contact with the curved face of the tooth on the wheel *j*, and hold the wheel *k*, and consequently the rollers connected with it, stationary until the tooth of the wheel *k* that is between the two teeth engaged by the wide tooth on the wheel *j* is engaged by the straight face of the next wide tooth of the said wheel.

The wheels *j* on the driving-shaft *h* are of different diameters, and the two wheels *k* are

also of different diameters, and are arranged to slide on the roll-shaft, so that either of them may be thrown into gear with its driver.

The object in this arrangement is to provide a means of altering the length of the feed cut. A shield, *l*, is placed behind the cutting-wheel on the crank side of the machine, to prevent the hands from getting into the wheel.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

The combination of the wheel *j*, having wide-faced teeth *l m*, arranged in different planes, and the wheel *k*, having teeth *p q*, arranged in different planes, substantially as herein shown and described.

CHARLES BRUSTMAN.

Witnesses:
FRANCIS BEYERLE,
JOSEPH RILLE.